



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION 10**  
**OREGON OPERATIONS OFFICE**  
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Mr. Jim McKenna  
Port of Portland & Co-Chairman, Lower Willamette Group  
121 NW Everett  
Portland, Oregon 97209

Mr. Robert Wyatt  
Northwest Natural & Co-Chairman, Lower Willamette Group  
220 Northwest Second Avenue  
Portland, Oregon 97209

Re: Portland Harbor Superfund Site; Administrative Order on Consent for Remedial Investigation and Feasibility Study; Docket No. CERCLA-10-2001-0240. TRVs for Round 2 Comprehensive Site Summary and Data Gaps Report

Dear Messrs. Wyatt and McKenna:

Recently, concerns have been raised about the TRVs presented in the Ecological Preliminary Risk Evaluation (PRE). EPA comments on the PRE stated that the Round 2 Comprehensive Site Summary and Data Gaps Analysis Report (Round 2 Comprehensive Report) should be based on the screening level TRVs presented in the PRE. The purpose of this letter is to clarify the use of certain TRVs as described below.

Aquatic tissue TRVs: EPA agrees with the hierarchy applied by the Lower Willamette Group whereby the Dyer et al. (2000) 5<sup>th</sup> percentile TRVs are preferred over TRVs developed based on the most conservative lowest-observed effect concentrations (LOEC), or ambient water quality criteria (AWQC) and bioconcentration factors (BCFs). The Dyer et al. (2000) TRVs are based on an extensive literature review, and represent reliable consensus 5<sup>th</sup> percentile values according to the current scientific literature for tissue-based TRVs. As a result, the aquatic TRVs presented in the PRE are acceptable for use in the Round 2 Comprehensive Report with the possible exception of chemicals for which the LWG did their own literature 5<sup>th</sup> percentile derivation. These chemicals include 4-methylphenol, total DDT, cadmium, PCBs and 2,3,7,8-TCDD. For 4-methylphenol, EPA accepts the value as is without the need for further refinement. For DDT, cadmium, PCBs and 2,3,7,8-TCDD, EPA is comfortable with moving forward with the TRVs as presented in the PRE. However, should new information suggest that important studies were left out that may influence the 5<sup>th</sup> percentile TRV derivation, EPA will work with the LWG to determine how to incorporate this additional information into the Round 2 Report in a time-frame compatible with the project schedule.

Aquatic Dietary TRVs: As noted in EPA's comments on the PRE, NOECs (where currently not listed in PRE tables 4-3 and 4-4) should be derived from LOECs using an appropriate extrapolation factor (e.g., as stated in PRE table 4-5). In addition, EPA has emphasized the need to use dose-based TRVs rather than concentration-based TRVs. These should be used in the Round 2 report if possible. Furthermore, in our comments on the PRE, EPA proposed an alternative approach for derivation of dietary dose-based TRVs based on work done by USACOE, EPA Region 2, and Menzie-Cura. Currently-derived dose-based TRVs are acceptable for use in the Round 2 report, but these alternative approaches should be considered for the baseline ERA.

Wildlife TRVs: EPA has further reviewed the TRVs presented in the PRE and recommends the following modifications for the Round 2 Report:

1. PAHs and dietary TRVs for Mammals: A NOAEL was not derived for PAHs and mammals. The dietary LOAEL TRV used in the PRE was 10 mg/kg/d (MacKenzie and Angevine 1981). An uncertainty factor of 10 should be applied to the LOAEL to derive a NOAEL TRV of 1 mg/kg/d.
2. 2-Methylnaphthalene and dietary TRV for Mammals: The dietary NOAEL and LOAEL TRVs used in the PRE were 5.4 and 114 mg/kg/d (Murata et al. 1997). According to Table 4-7, the NOAEL of 5.4 mg/kg/d was extrapolated from a subchronic NOAEL of 54 mg/kg/d. However, this appears to be an error since both the NOAEL and LOAEL from this study were derived from the same 81-week experiment, which constitutes a chronic exposure duration for mice. In Appendix B of the PRE, the LWG likewise states that the chronic NOAEL is 54 mg/kg/d. Because there is no need to extrapolate from a subchronic value, NOAEL and LOAEL values of 54 and 114 mg/kg/d, respectively should be used in the PRE and in the Round 2 report.
3. DDE and dietary TRVs for Birds: The dietary NOAEL and LOAEL TRVs used in the PRE were 0.12 mg/kg/d based on the American kestrel (Lincer 1975) and 0.32 mg/kg/d based on the barn owl (Mendenhall et al. 1983), respectively. The barn owl appears to be more sensitive to DDE than the kestrel based on typical back-calculations (i.e., 10X) from LOAELs to NOAELs. EPA agrees with the LOAEL TRV of 3.2 mg/kg/d. However, instead of using the kestrel-based NOAEL, an uncertainty factor of 10 should be applied to the barn owl LOAEL to estimate a barn owl NOAEL of 0.032 mg/kg/d.
4. Total DDT and dietary TRVs for Mammals. The dietary NOAEL and LOAEL TRVs used in the PRE were 1.2 mg/kg/d based on a rat study (Duby et al. 1971) and 1.3 mg/kg/d based on a mouse study (Ware and Good 1967), respectively. Because the NOAEL and LOAEL are for different species and to be environmentally conservative, the mouse LOAEL should be divided by an uncertainty factor of 10 to estimate a mouse NOAEL 0.13 mg/kg/d.
5. 2,3,7,8 TCDD, PCBs, and dietary TRVs for mammals. EPA continues to support use of NOAELs and LOAELs from the Tillitt et al. (1996) studies using field-collected carp from Saginaw Bay, even though we recognize the uncertainties involved from exposing mink to a mixed source of contaminants. Therefore, as in the PRE, these values should be retained for the Round 2 report as screening values and their uncertainties discussed in the Uncertainty Analysis. For the baseline ERA (BERA), EPA supports a reanalysis of whether these values would be appropriate for a higher tiered (i.e., not screening-level) risk characterization.

Please incorporate these changes into the Round 2 Comprehensive Report. Please contact Chip Humphrey at (503) 326-2678 or Eric Blischke (503) 326-4006 if you have any questions. All legal inquiries should be directed to Lori Cora at (206) 553-1115.

Sincerely,

Chip Humphrey  
Eric Blischke  
Remedial Project Managers

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